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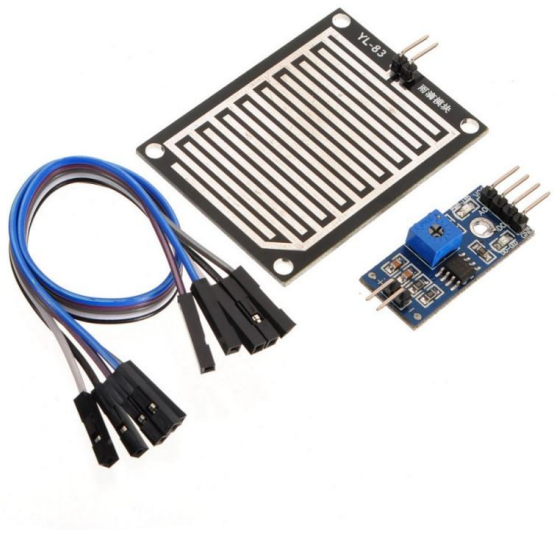
Yl-83 Rain Detector



Vaisala YL-83 Rain Detector

Features/Benefits

- Fast and accurate precipitation detection (ON/OFF)
- Rain intensity measurement with processing unit
- Maintenance free
- Heating element for keeping sensor free of snow and condensed moisture, and for quick drying

Rain and snow are quickly and accurately detected with the YL-83 Rain Detector. The YL-83 operates via droplet detection rather than by signal level threshold.

A special delay circuitry allows about two-minute interval between raindrops before assuming an OFF (no rain) position. This enables the sensor to accurately distinguish between rain cessation and light rain.

The YL-83 also features an analog Rain Signal for estimating rain intensity. Since this signal is proportional to the percentage of moist or wet area on the sensor plate, rain intensity has a direct impact on the amplitude and variation of this analog signal.

The YL-83 sensor is positioned at a 30° angle. This design, together with the internal heating element, ensures that the surface dries quickly, an essential factor in calculating intensity. The same heating element also protects the surface from fog and condensed moisture, and is activated at low temperatures in order to melt snow, thus allowing snow detection. Sensor performance is not affected by reasonable amounts of dirt and dust due to droplet detection.

It is intended to be used in areas
with only rain or wet/moist snow precipitation.

Technical Data

Sensor

Capacitive principle, thick layer sensor
RainCap™ with a thin glass shield. Integrated heater element.

Sensitivity of Rain Detection

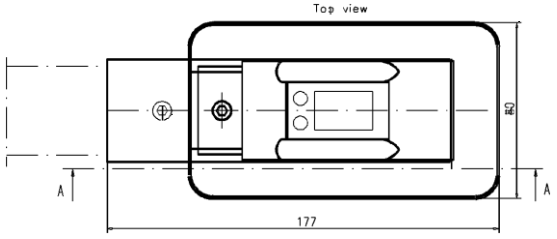
Minimum wet area	0.05 cm²
OFF-delay (active)	< 5 min

Physical

Sensor plate	
Sensing area	7.2 cm²
Angle	30°
Housing material	Polypropylene
Windshield and support bracket	Aluminum
Moisture shield	Polyurethane
Dimensions	(h × w × l)
With wind shield	110 × 80 × 175 mm
Without wind shield	90 × 46 × 157 mm
Weight	500 g
Cable length	4 m

Electrical

Supply voltage	12 VDC ± 10 %
Supply current	
Typical less than	150 mA
Maximum	260 mA
Heater OFF	25 mA
Sensor plate	
Heating power	0.5 ... 2.3 W



Output

Rain ON/OFF

Open collector, active low signal corresponds to rain	
Maximum voltage	15 V
Maximum current	50 mA
Analog output	1...3 V (wet...dry)
Frequency output	1500...6000 Hz, non-calibrated

Input

Control to switch heater OFF

Open circuit input enables the heater.	
Connection to GND disables the heater.	
Contact rating min.	15 V, 2 mA

Ground Wiring

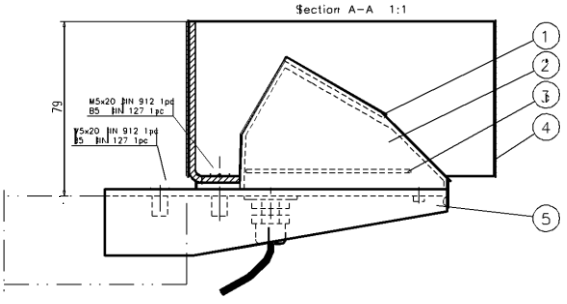
Separate ground wires for signal and heater

Temperature Range

Operating	-15...+55 °C (+5...+131 °F)
Storage	-40...+65 °C (-40...+149 °F)

Mounting

By one screw (M5 x 20 mm) to sensor arm



1. *Sensor, RainCap™*
2. *Polyurethane moisture shield*
3. *Component assembly*
4. *Wind shield*
5. *Mounting plate*

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